

CLAIMS

1. A motorized cover system for a vehicle comprising:

a cover movably connected with respect to the vehicle for covering a
5 compartment in the vehicle;

at least one motor connected to the vehicle; and

at least one linkage operatively connecting the cover to the motor, wherein
10 said at least one motor is operable for moving the cover between a closed position and at
least one open position.
2. The motorized cover system of claim 1, wherein the compartment
is a power plant compartment, the cover is a hood and the compartment is substantially
covered in the closed position and is substantially exposed in said at least one open
position.
3. The motorized cover system of claim 1, further comprising at least
one latch assembly disposed between the vehicle and the cover for securing the cover to
the vehicle, wherein said at least one latch assembly is engageable for securing the cover
to the vehicle in the closed position and disengageable for permitting movement of the
5 cover.
4. The motorized cover system of claim 3, wherein said at least one
latch assembly is automatically engageable and automatically disengageable.

5. The motorized cover system of claim 3, wherein said at least one latch assembly includes a striker and wherein said striker is engaged when the cover is in the closed position and disengaged when the cover is in said at least one open position.

6. The motorized cover system of claim 5, wherein the striker is disposed on the cover.

7. The motorized cover system of claim 1, further comprising an operator input device, wherein the operator input device is operatively connected to the motor for operating the motor.

8. The motorized cover system of claim 7, wherein the operator input device is operatively connected to said at least one latch assembly for engaging and disengaging said at least one latch.

9. The motorized cover system of claim 1, wherein said at least one linkage includes a first link longitudinally, shiftably driven by said at least one motor and a second link having a first end and a second end, wherein the second link is pivotably connected at the first end of the second link to the cover and at the second end of the
5 second link to the shiftable first link.

10. The motorized cover system of claim 9, further comprising at least one hingeable connector portion hingeably connecting the cover with respect to the vehicle.

11. The motorized cover system of claim 9, wherein the first link is a worm gear.

12. The motorized cover system of claim 9, wherein said at least one motor includes a first motor and a second motor, wherein said second motor is operatively connected to the vehicle;

5 wherein said at least one linkage includes a first linkage and a second linkage;

wherein said second linkage includes a third link having a first end and a second end, wherein said third link is pivotally connected at the first end of the third link to the cover and wherein said third link is pivotally driven at the second end of the third link by the second motor.

13. The motorized cover system of claim 12, wherein the cover is characterized by a lack of hingeable connector portions hingeably connecting the cover with respect to the vehicle.

14. The motorized cover system of claim 12, wherein the vehicle has a roof and wherein the cover is at least partially over the roof in said at least one open position.

15. The motorized cover system of claim 12, wherein the vehicle has a passenger compartment and wherein the cover is at least partially over the passenger compartment in said at least one open position.

16. The motorized cover system of claim 12, wherein the vehicle has a windshield and wherein the cover is at least partially over the windshield in said at least one open position.

17. The motorized cover system of claim 1, further comprising at least one hingeable connector portion hingeably connecting the cover with respect to the vehicle.

18. The motorized cover system of claim 1, wherein the cover is a hood and the compartment is an engine compartment, and wherein the vehicle has a vehicle frame, the vehicle frame comprising:

5 a plurality of structural load-bearing frame members including

two front hinge pillars,

at least one cross member mounted with respect to the two front hinge
10 pillars and partially defining the engine compartment, and

two rails mounted with respect to the at least one cross member and further partially defining the engine compartment; and

15 a body panel assembly;

wherein the body panel assembly includes the hood; and

wherein the body panel assembly is rigidly mounted to each of at least two
20 of the frame members so that the body panel assembly forms a portion of the frame by structurally interconnecting said at least two frame members.

19. A motorized cover system comprising:

a cover, wherein the cover is connectable with respect to a compartment;

5 at least one motor; and

at least one linkage operatively connectable to the cover and to said at least one motor, wherein said at least one motor is operable for moving the cover between a closed position and at least one open position such that the compartment is substantially covered when the cover is in the closed position and is substantially exposed when the
10 cover is in said at least one open position;

wherein said at least one linkage has a first link longitudinally, shiftably drivable by said at least one motor and a second link having a first end and a second end,
15 wherein said second link is pivotably connectable at the first end of the second link to the cover and at the second end of the second link to the shiftable first link.

20. The motorized cover system of claim 19, wherein the cover is a hood and the compartment is a power plant compartment.

21. The motorized cover system of claim 19, wherein said at least one motor includes a first motor and a second motor;

wherein said at least one linkage includes a first linkage and a second
5 linkage;

wherein said second linkage includes a third link having a first end and a second end, wherein said third link is pivotably connectable at the first end of the third link to the cover, and wherein said third link is pivotably drivable at the second end of the
10 third link by the second motor.

22. The motorized cover system of claim 19, further comprising at least one latch assembly disposable between the cover and the compartment for securing the cover over the compartment, wherein said at least one latch assembly is engageable to secure the cover over the compartment and disengageable for permitting movement of the
5 cover.

23. A method of opening and closing a vehicle compartment cover, the method comprising:

relaying an operator control signal to at least one motor mounted to a
5 vehicle in response to an operator input applied to an operator input device, wherein the operator input device is operatively connected to said at least one motor for stopping and starting said at least one motor, and wherein said at least one motor is operatively connected to a cover for covering a vehicle compartment;

10 powering said at least one motor in response to the operator control signal;
and

moving the cover between a first position and a second position by the powered motor wherein at least one linkage operatively connects the cover to said at least
15 one motor;

wherein one of said first position and said second position is a closed position in which the cover substantially covers the vehicle compartment and one of said first position and said second position is an open position in which the cover substantially
20 exposes the vehicle compartment.

24. The method of claim 23, wherein the vehicle compartment is a power plant compartment and the cover is a hood.

25. The method of claim 23, further comprising:

relaying said operator control signal to at least one latch assembly,
wherein said at least one latch assembly includes a striker engaging member, wherein
5 said at least one latch assembly is disposed between the cover and the vehicle for
securing the cover to the vehicle, and wherein the operator input device is operatively
connected to said at least one striker engaging member; and

10 moving said striker engaging member from a first position to a second
position in response to the operator control signal, wherein at least one of said first and
second positions is an engaged position in which the cover is in the closed position and
secured to the vehicle and at least one of said first and second positions is a disengaged
position in which the cover is moveable.

26. The method of claim 23, wherein said at least one linkage includes
a first link longitudinally, shiftably driven by the motor and a second link having a
second link first end and a second link second end, wherein said second link is pivotally
connected at said second link first end to the cover and at said second link second end to
5 the shiftable first link.

27. The method of claim 26, wherein said at least one motor includes a
first motor and a second motor, wherein said second motor is operatively connected to
the vehicle, wherein said at least one linkage includes a first linkage and a second
linkage;

5 wherein said second linkage includes a third link having a first end and a
second end, wherein said third link is pivotally connected at the first end of the third link
to the cover and wherein said third link is pivotally driven at the second end of the third
link by the second motor.

28. The method of claim 27, wherein moving the cover includes translatable movement of the cover with respect to the vehicle.

29. The method of claim 27, wherein the vehicle has a windshield and wherein substantially all of the cover is above the compartment and is at least partially over the roof windshield the cover is in said at least one of said first and said second positions that is an open position.